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ABSTRACT

This booklet, which has been designed for a diverse audience, including work team members, supervisors/managers, trade union members, employers, trainers, teachers/lecturers, human resource managers, and students/trainees, presents basic information about the purpose, content, and quality of competency standards for vocational education within the framework of South Australia's vocational education and training system. Discussed first are fundamental ideas underlying the concepts of competency and competency-based training. South Australia's national framework for competency standards is examined. The remaining four sections explain the following: who is involved in developing competency standards, how they are developed, what they look like, what types of standards are developed, and how they can be judged. Appended are the following: a list of abbreviations, Australian Standard Framework descriptors, guidelines for becoming a competency standards body, a list of 45 competency standards bodies endorsed by the National Training Board (NTB), a 13-item annotated bibliography of publications about data gathering techniques, a list of the NTB-endorsed competency standards as of October 1994, and a 27-item annotated bibliography of useful references concerning competency standards. (MN)

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DEVELOPING COMPETENCY STANDARDS

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GETTING TO GRIPS WITH DEVELOPING COMPETENCY STANDARDS

Prepared by
Peter Thomson

This booklet was funded by the Commonwealth Department of Employment, Education and Training

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ABOUT THE SERIES

The 'Getting to Grips With . . .' series has been written for the general reader who wants to understand important trends in vocational education and training. The first two booklets in the series have been generously funded by the Commonwealth Department of Employment, Education and Training.

Each booklet is in two parts. The first part comprises a description of the subject matter in a manner which is intended to be clear to any interested layperson. The second part gives an annotated list of publications for those who want to read further.

Other titles in the series include: *Getting to grips with competency-based training and assessment*, *Getting to grips with skills audits*, *Getting to grips with industry restructuring*, *Getting to grips with key technologies*, *Getting to grips with on-the-job training*, *Getting to grips with on-the-job competencies*, *Getting to grips with quality*, *Getting to grips with assessment* and *Getting to grips with implementing CBT*.

The series editor is Dr William Hall, executive director, National Centre for Vocational Education Research Ltd.

ABOUT THIS BOOKLET

The initial draft of this booklet was written by Jennifer Gibb who was, at the time, a research officer at the National Centre for Vocational Education Research. It was prepared when several changes were taking place in the National Training Board's approach to standards development, not the least being the increasing emphasis on enterprise standards. One consequence of this was a substantial amount of new input to the draft suggested by Mr Peter Hannigan, the NTB's Manager of Policy and Research.

Peter Thomson has prepared the final document by bringing together the work of Gibb and Hannigan and adding some contributions of his own. The editorial advice of Dr William Hall and the assistance of the National Clearinghouse in preparing the annotated bibliographies are also gratefully acknowledged.

This book was generously funded by the Commonwealth Department of Employment, Education and Training.

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WHO IS THIS FOR?

If you're interested in the development of competency standards, this booklet is for you.

You may be:

- a member of a work team
- a supervisor
- a manager
- a member of a trade union
- an employer
- a trainer
- a teacher or lecturer
- the human resource manager of a company
- a student or trainee

As part of your job you may also be:

- an industry representative who is asked to comment on draft sets of competency standards for your industry;
- a manager of a company who has to understand how competency standards can be used.

You may well be a person who has to use the competency standards—for example:

- a trainer who has to provide the training that will enable people to achieve the standards;
- an assessor who has to assess people against the competency standards;
- a manager who needs the standards for recruiting new or evaluating existing members of the company's workforce.

INTRODUCTION

Competency-based training (CBT) is the new approach to training being adopted by the Australian vocational education and training system. It is based on **what people are expected to be able to do in the workplace**.

It involves a shift away from programs that dealt with skills and knowledge without much regard for the jobs at the end of the training. This **shift of emphasis from training inputs to training outcomes and the relevance of the world of work is at the heart of CBT** and training reform.

A vineyard trainee learning on the job at Southcorp's Coonawarra Vineyards, South Australia (photo Megan Dixon)

Competency standards are one way in which industries and enterprises can describe their needs. However, for people to understand each other's standards they need to be expressed in a consistent way and based on common understandings. The need to develop a common framework for, and understanding of, competency standards was part of the reason the National Training Board (NBT) was set up.

The NTB is a company owned by the Commonwealth, State and Territory Governments. It assists industry to develop national competency standards, and endorses those standards as the basis for the operation of the vocational education and training system in Australia. It carries out a quality assurance role on the content of the standards and their implementation.

The aims of this booklet are to explain:

- the underlying knowledge that is necessary in order to understand how competency standards are developed
- what the role of the NTB is and the importance of the Australian Standards Framework (ASF)
- who is involved in developing competency standards and what they do
- what competency standards look like
- what types of competency standards can be developed
- how to judge the quality of a competency standard
- where to get further guidance

FUNDAMENTAL IDEAS

What does the term 'competency' really mean?

To understand competency standards we must first understand the term 'competency' as defined by the National Training Board.

> *. . . the concept of competency focusses on* ***what is expected of an employee in the workplace*** *rather than on the learning process. . . . all aspects of work performance and not only narrow task skills are included*
>
> (NTB, 1992 p.29)

Competency therefore is the ability to perform whole work roles to the standard expected in employment.

Work performance is more than narrow task skills (photo NCVER)

Job performance involves more than the performance of a well-defined set of tasks in a routine predictable way. *Whole work roles* means that competency encompasses not only the obvious aspects of performance—the **task skills** involved at work—for example:

- preparing a production report (in the car industry)
- controlling disease and vermin in a vineyard (in the wine industry)
- sterilising packaging lines (in the pharmaceutical industry)
- serving wine with a meal (in the hospitality industry)

but also the less recognised but equally important skills in the world of work, such as the ability to:

- handle a number of tasks at the same time, deal with variability, co-ordinate and organise work (**task management skills**)
- deal with contingencies, problems, unusual and unexpected situations such as delays, break-downs, tight schedules (**contingency management skills**)
- work with groups and individuals within an organisation, communicate effectively with colleagues within and external to the organisation (**job role/environment skills**)

This *broad concept of competency* recognises that everyone who works:

- communicates with others
- interacts with and relates to others
- manages or juggles tasks
- organises, plans or schedules activities
- deals with problems and unusual or unexpected situations
- complies with regulations, codes of practice, professional ethics
- maintains the safety of the work environment
- knows how to deal with hazards and emergencies
- uses technology
- exercises judgement and makes decisions
- reads, interprets, calculates, records data and information relating to work activities

The degree to which these activities form part of the work role and their relative importance will vary depending on the job.

The essence of the competency-based approach lies in its recognition that work is the interaction of skills, knowledge and attitudes. This fact must be reflected in the competency standards otherwise the standards have little value. If a standard does not reflect both the technical and non-technical aspects of work, then the standard is failing to reflect truly the activities carried out in employment.

What are competency standards?

Competency standards are essentially specifications of the performance expected in employment. These specifications must describe:

- what the employee is expected to do—in other words, outcomes
- how well that employee is expected to perform
- how to tell when the employee is at the expected level of performance

These three requirements are the basis for a *competency standard.*

Further requirements of a competency standard are that the outcomes described are in simple English and related to realistic workplace practices; this in turn means the standards must be:

- developed by industries or enterprises in consultation with all relevant stakeholders
- able to be used flexibly by different enterprises
- reviewed on a regular basis to ensure they remain up-to-date and relevant to the world of work

Why are we interested in competency standards?

Virtually all Australian workplaces have been affected by award restructuring which has brought with it reforms such as simplified job classifications and new career paths. As new methods of organising work evolve there is a wider range of skills expected of all workers at all levels.

Increasingly work is being organised into autonomous work teams, and quality assurance is becoming a part of every worker's responsibility. These changes are producing an increasing demand not just for sophisticated technical skills, but also for interpersonal, analytical, communication and problem-solving skills.

The move to develop competency standards has grown out of these demands as well as the pressures brought about by the increasing international competition faced by Australia.

Furthermore, in order for Australian industry to be competitive it needs a workforce that can adapt quickly to change. It is also to the advantage of all workers to acquire skills that will enable them to cope with the changing environment at work.

Standards according to the NTB must therefore:

> *. . . include problem solving, team work, communications, and the underlying skill and knowledge to enable competency to be demonstrated in new and unexpected situations.*
> *. . . capture the ability to apply skills in new situations and changing work organisation rather than simply reflecting the tasks currently performed . . .*
>
> (NTB 1992, p.8 & p.29)

This illustrates the importance of identifying knowledge and understanding in competency standards.

The critical point to be made about knowledge and understanding is that when it is expressed in a competency standard, it should be placed in context. In other words, it should be expressed in terms of how it relates to the work activities being described.

What is competency-based training (CBT)?

Put simply, CBT is based around:

- being clear about what people need to be able to do in their jobs;
- training to deliver their needs in the form of outcomes;
- confirming that they can, in fact, do what they need to be able to do.

The competency standards express the needs. The training is based on these standards and confirmation of competence is obtained by assessments which provide the assurance that outcomes are being achieved.

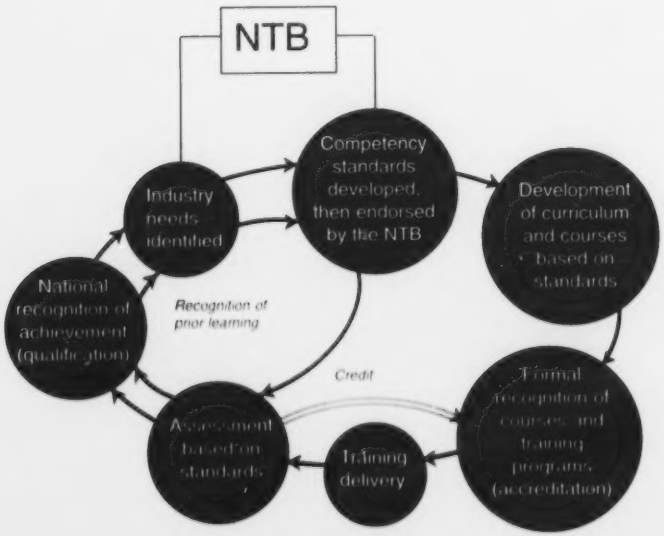
The following decision has to be made when assessing a person's competency. **Is there enough evidence to allow the assessor to infer that the person has reached the level of performance described in the competency standards?**

This evidence comes from the assessment of both performance and knowledge.

Once the assessment decision has been made, then a qualification or 'statement of attainment' is issued which records the competencies that have been achieved.

The relationships between competency standards, training, assessment and the award of qualifications is shown in Figure 1. The figure also identifies the responsibilities of the National Training Board (NTB) within the Vocational Education and Training (VET) system.

Figure 1: National Competency Standards and the Vocational Education and Training System


NTB
Competency standards developed, then endorsed by the NTB
Industry needs identified
Development of curriculum and courses based on standards
National recognition of achievement (qualification)
Recognition of prior learning
Credit
Formal recognition of courses and training programs (accreditation)
Assessment based on standards
Training delivery

Let us now summarise the key features of competency standards.

Competency standards should:

- focus on what workers are expected to be able to do in the workplace;
- be expressed as outcomes;
- reflect all aspects of work performance:
  - task skills
  - task management skills
  - contingency management skills
  - job role/environment skills;
- focus on skills and knowledge that can be transferred to new situations;
- include underpinning knowledge and understanding;
- be related to realistic workplace practice;
- be easy to understand;
- reflect current and future trends and needs of industry;
- be owned and derived from industry;
- provide enough guidance for:
  - design and delivery of training
  - assessment of competence.

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What are the benefits of competency standards?

National competency standards benefit workers, employers and trainers. Standards are a clear and public statement of the expectations of the workplace and therefore everyone has access to this information. Furthermore, because they are developed by the industry parties and reviewed regularly, training based on these standards is relevant to industry and enterprise needs.

The fact that competency standards are national means that, no matter where or how workers achieve their competencies (if they have been assessed and recognised), the employer can be sure that the national standard has been achieved. Likewise, no matter where training is conducted, whether at the workplace, in a college or in a combination of the two, it must always aim to achieve the same outcomes and therefore there is consistency.

Moreover, once competencies are officially recognised and certified, if workers choose or are forced by changing circumstances to seek work elsewhere, the competencies they have gained are portable around the country.

This is a radical change from a system in which the content of training programs was often dependent on individual teachers and focussed heavily on the knowledge required to pass the course. Traditional qualifications were often knowledge-based and were basically statements of completion of course requirements. These statements told us what people 'knew' rather than what they could do.

CBT, in contrast, focusses on practical performance—that is, what people do with the skills, knowledge and attitudes they have acquired.

The benefits of competency standards operate at the levels of:

- the nation
- industry
- enterprises

Graduates of the wine industry's new certification system reaping the benefits of competency standards (photo SA Food and Beverage Industry Training Council)

These benefits are summarised below.

Summary: Some benefits of competency standards

National level

- More cost efficient, relevant and accountable vocational education and training provision.
- Enhanced skill formation to help compete internationally.
- Consistent assessment against national industry standards is possible.

Industry level

- Better identification of overall skill needs.
- Provision of a clear understanding of course outcomes across the industry.
- Less duplication of training effort when standards used as starting point.
- Greater confidence that industry needs are being met as a result of assessment based on standards.
- Allows for a national system of qualifications relevant to the industry.

Benefits for enterprises

- Accurate identification of existing competencies of workforce possible.
- Improved recruitment effectiveness through matching competency requirements of jobs with applicants.
- Training can be directed at skill gaps and specific enterprise requirements.
- Assessment of outcomes of training will be more reliable and consistent.

Adapted for NTB Network No.11 August 1993

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THE NATIONAL FRAMEWORK FOR COMPETENCY STANDARDS

Having understood the fundamental concepts of competency, competency standards and CBT, it is useful to gain an understanding of the role of the National Training Board (NTB) and the importance of the Australian Standards Framework (ASF).

The role of the National Training Board

The NTB has a board of directors drawn from the Federal, State and Territory governments that own the NTB, from employer and union organisations and an independent chairperson drawn from industry.

The roles of the board are:

- to establish and maintain a nationally consistent approach, format and framework for developing and expressing competency standards;
- to recognise bodies to develop competency standards;
- to assist the industry or enterprise parties to develop their standards;
- to endorse the competency standards developed by enterprise, industry or cross-industry bodies;
- to maintain registers of endorsed national competency standards, accredited courses, recognised training programs and registered providers of training;
- to monitor the implementation of competency standards and facilitate their review.

The second edition of the NTB's Policy and Guidelines provides developers of competency standards with a common framework and language for describing competencies. It is important that this framework is followed by developers so that the competency standards are understandable to all interested parties.

This approach helps to draw out the similarities between industries and does not mean the focus is always on the differences. This point about highlighting similarities is particularly important when we consider that the aim of training reform is to create a more flexible and adaptable workforce that is equipped to cope with change—change in work organisation, change in technology, change in the type of jobs available in the economy.

The framework for competency standards provides a basis for a national vocational education and training system which:

- allows for consistency and portability of competencies
- ensures training and assessment is industry driven
- maintains quality assurance
- leads to flexibility and responsiveness, through recognition of prior learning (RPL) and credit transfer

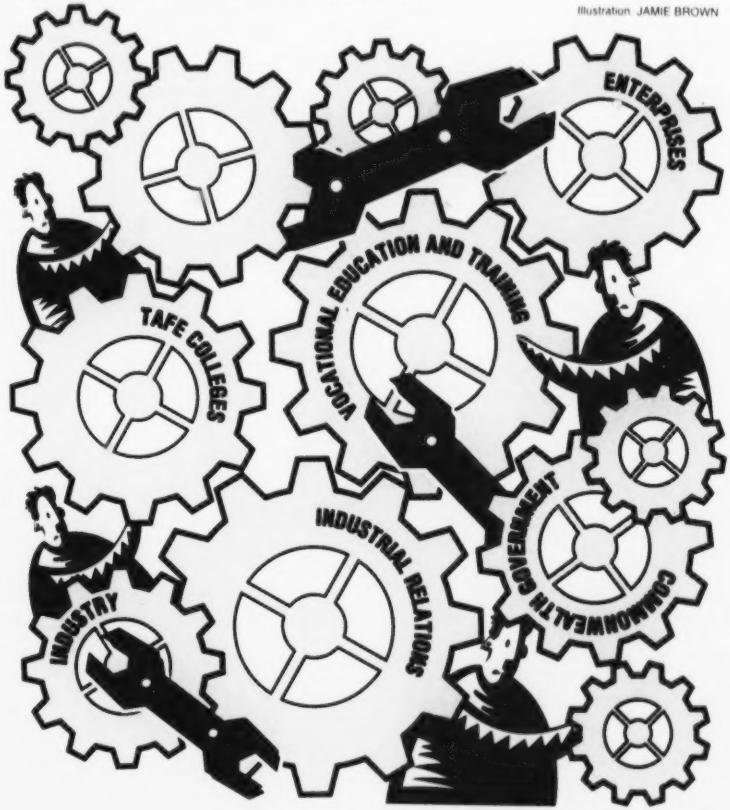
The Australian Standards Framework (ASF)

The Australian Standards Framework (ASF) provides a bridge between the competency requirements of work and the vocational education and training system. The framework describes a set of eight competency levels starting

from the level at which work is limited to tasks and roles done under direct supervision right up to the competency level that involves full responsibility and accountability for all aspects of work.

The ASF is a useful tool in that it provides a framework within which to categorise or classify competency levels and therefore it promotes consistency across industries, and between sectors within industries.

Illustration: JAMIE BROWN



Key features:

- The ASF describes the common skill requirements of work in a changing industry and enterprise context—it goes beyond the requirements of a particular job function or occupation.

- The ASF is not designed (or intended to be used) to determine job or occupational classifications (this is something for the industrial parties to do).

- Competency at a particular level does not imply that the competencies at all lower levels in that industry are held unless an industry explicitly requires this to be so.

- The progression from one level to the next in the ASF can entail an increase in:
  - level of discretion, autonomy
  - span of activity
  - range of contingencies to be dealt with
  - extent of judgement involved
  - responsibility and accountability
  - complexity, breadth, depth of knowledge
  - management or specialist functions.

- The ASF level is determined by **groups** of units of competency—that is, it is a group of units in combination which constitute competency at a particular level on the ASF.

- The ASF level is not determined by the job, existing classification, occupation title or historical relativities.

Descriptions of the characteristics which identify each of the eight levels and indicate how to distinguish one from another are provided as Appendix B.

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Competency standards and industrial relations

Education and training have linkages with industrial relations that are hard to separate. One of the objectives of both workplace and training reform is to establish a closer relationship between work and education and training. However the competency-based requirements for progression in work, or for deciding industrial classifications that are a consequence of the reforms, have made competency standards an industrially sensitive area.

National competency standards can be referred to in industrial awards and agreements. However, the view of the NTB is that competency standards should not be written into awards and agreements. Including competency standards in awards and agreements has the potential to create problems when the standards are changed in subsequent reviews. There is also the danger that doing so will reduce the flexibility of the national framework.

It is the view of the NTB that:

> *the levels of standards in any industry should be determined by sound analysis of the specific performance outcomes that are required rather than by the number and type of industrial classifications that have resulted from negotiations between the industrial parties.*
>
> (NTB 1992, p.8)

This presents considerable challenges to those involved in the development of competency standards because it is

necessary to put to one side the industrial relations issues and the way in which work has been categorised in the past.

WHO IS INVOLVED IN DEVELOPING STANDARDS AND HOW DO THEY DO IT?

Who develops competency standards for an industry or enterprise?

Industry identifies the competencies it needs and specifies them in the competency standards. Industry has the central role in the development as the standards must relate to the requirements of jobs, and are intended to make vocational education and training more relevant and responsive to the needs of industry and enterprises.

The competency standards for an industry or enterprise are developed and owned by the industry or enterprise. It is usual for industries or enterprises to seek endorsement of their standards in order to access the national recognition system and influence the content of vocational training and education.

Competency Standards Bodies (CSBs)

Standards that are submitted to the NTB for endorsement need to have been developed by a recognised body, which is called a Competency Standards Body (CSB). The purpose of formal recognition of the body by the NTB is to ensure that the developers have a clear area of coverage, and will

produce standards acceptable to their stakeholders. In particular the CSB needs to be suitably representative of the various industry or enterprise interest groups.

The NTB requires industry CSBs to be representative of at least employers and employees. For enterprise CSBs the NTB asks for appropriate involvement of enterprise management and employee representatives in developing and agreeing to the standards.

Appendix C provides further information on how to become a recognised CSB. A full list of CSBs is provided in Appendix D.

Where does the information come from to write competency standards?

The starting point for writing competency standards is to seek information from a wide cross section of industry or enterprise representatives about the skills, knowledge and attitudes required to carry out work activities.

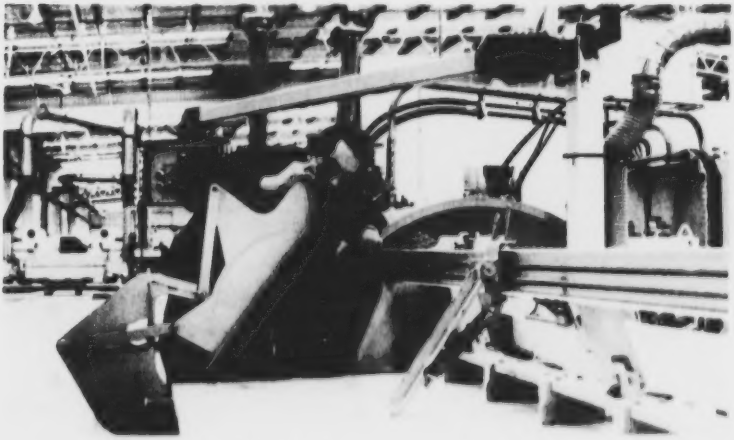
Gathering the necessary information generally involves group fact-finding sessions and individual consultations with appropriate people in the industry or enterprise.

Fact-finding techniques

The aim here is to get common agreement from a range of sources on what skills and knowledge are applied in the workplace in order to achieve the outcomes expected by industry or an enterprise.

A combination of a number of techniques can be used to analyse jobs and skills and get the necessary information:

- site visits and observation
- interviews:
  - informal
  - formal
  - critical incident technique
- questionnaire-based methods:
  - general questionnaire-based methods
  - Delphi survey
- structured group sessions:
  - search conference
  - DACUM
  - functional analysis
  - nominal group technique



The workplace is the best place to observe what skills are required (photo SA Forest Industries Training Council Inc)

A brief description of each of these techniques is provided below.

Appendix E provides you with an annotated bibliography of books that give full descriptions of how to conduct each of these techniques and what the strengths and weaknesses of each are.

Site visits and observations:

- The researcher needs to be unobtrusive during observation and should record all observations objectively. For reliable findings, a number of observations need to be carried out over a longer period of time.

Interviews

- Informal interviews:
  Informal, unstructured one-to-one interviews allow the researcher to ask flexible, open questions. This technique is useful for exploring broad issues but can lead to opinions rather than facts being generated. The results of informal interviews needs to be validated by more rigorous forms of data gathering.

- Formal interviews:
  This involves a more structured approach to the interview. The researcher asks each person being interviewed the same questions. This tends to produce a narrower range of answers which can then be analysed more easily than the answers given during an informal interview.

- Critical incident technique:
  The researcher asks the person being interviewed to describe a work incident of particular significance which lead to a successful or unsuccessful outcome. This technique seeks to pinpoint skills which other techniques may have missed because it goes beyond readily observable behaviour.

Questionnaire-based methods

- General questionnaire-based methods:
  Individuals are asked to provide written answers to questions in the questionnaire and return the questionnaire to the researcher. Questionnaires should be well-designed, pre-tested and distributed to a representative sample of the population, if it is impractical to survey the whole population. Questionnaires are notorious for having a poor response rate, even though they are a cheap method of reaching a large number of people. It is important to work hard with follow-up letters and telephone calls to achieve a high return rate.

- Delphi survey:
  This technique can take the form of a questionnaire or a conference and is ideally suited to between 10 and 30 people. The technique is used mainly to identify the pattern of likely or desirable future trends from a panel of experts.

Structured group sessions

- All the brainstorming techniques described below involve groups of people sitting in a room together being creative and contributing ideas under the leadership and direction of a skilled facilitator. Participants should be representative of the industry and able to express their ideas clearly and willingly. All techniques can be modified to suit the topic being analysed, the time available and the dynamics of the group.

- Search conference:
  This technique works well with groups of 15–30 people and is useful for assessing a current situation and predicting future trends and needs. Participants work in small groups of 5–10 before reporting back to the large group. A search conference tends to start with a statement of the main objective and then the group seeks to reach agreement on future needs, strategies to meet those needs and the outcomes and impacts of those strategies.

- DACUM (**D**evelop/Design **A** **C**urricul**UM**):
  This technique works best with groups of 8–14 people over 1–3 days and aims to produce a skill inventory for an occupation or range of jobs. It is a technique favoured by developers of training curriculum (as the name suggests). The group identifies general areas of competency and tasks within the job, analyses the data to group it in the order that reflects the job and finally develops a list of topics for training programs.

- Functional analysis:
  This workshop method is suited to 8–12 people who represent the range of workers in the occupation being analysed. The approach breaks down an occupation into its major roles and functions. The aim of functional analysis is to generate competency standards by asking the group a series of questions that aim to identify in increasing detail what is involved in carrying out their work activities.

- Nominal group technique:
  This technique is the most disciplined of all the brainstorming techniques. It involves individual silent work before group members share their ideas in turn. No discussion takes place during this phase. The group then merges ideas and establishes a priority for them by voting. Discussion can take place during the later stages.

Consultation

Once the basic facts have been collected, documented and analysed it is up to the developers of the standards and the CSB supervising the standards development to write the standards. In doing this they would consult with the parties across industries, within an industry or in an enterprise, as appropriate. Consultations would be as often as is necessary to ensure the precision of the standards. Effective consultation with all relevant parties is crucial to ensure acceptance and ownership of the completed standards.

If the CSB has national coverage this consultation must be national. Groups that must be consulted throughout the development process include representatives of:

- employer groups
- union groups
- training providers
- State and Territory training authorities
- other relevant CSBs
- National Training Board

Consultation and planning session (photo SA Forest Industries Training Council Inc.)

The following is an outline of one consultation process:

- conduct DACUM or functional analysis sessions to identify the major skills required of all types of worker within the industry or enterprise; these sessions could be conducted in one or a number of States;
- conduct site visits to observe work and interview workers at different levels of competency;
- convene panels of 8–12 industry representatives and use a structured group session in order to:
  - discuss the unit and element structure
  - identify any additional units and elements
  - gather further information for performance criteria, range statements and evidence guides;
- write early drafts of the standards and using questionnaires and/or telephone interviews seek comment from:
  - NTB representative
  - panel of industry or enterprise representatives
  - competency standards body
  - other relevant CSBs;
- rewrite the draft standards based on comments received from the above groups;
- convene industry reference groups in other States to discuss and comment on later drafts of the standards;
- write final version of the standards based on comments received from the industry or enterprise parties and major stakeholders;
- send the near final version of the standards to any other relevant industry or enterprise parties identified by the NTB and also to the State and Territory training authorities; .
- seek letters of support from the major industry or enterprise parties and major stakeholders.

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Every industry, enterprise and cross-industry group will develop its own method of consultation to reflect the needs of their particular stakeholders.

Consultation involves frequent contact with a wide range of representatives to ensure that any major changes made to draft competency standards have the support and approval of the various stakeholders.

Summary

The crucial aspects of the fact finding and consultation processes are that, whatever combination of techniques is used:

- **the focus must be national;**
- **the major industrial or enterprise parties must be consulted;**
- **every effort must be made to avoid bias and discrimination;**
- **the interests of all the major groups within the industry or enterprise need to be addressed;**
- **the relevance to the needs of enterprises and their capacity to use the standards must be assured.**

Moreover, any fact finding and consultation techniques used must aim to draw out:

- **all aspects of competency—not just the narrow technical skills;**
- **current and emerging trends and needs in industry;**
- **information on the level of performance expected in industry or enterprise;**
- **information regarding the context within which competencies are demonstrated;**
- **information about what distinguishes one level of competency from another within that industry or enterprise;**
- **details of the evidence required to assess competency.**

Contact with the NTB

Early, frequent and open communication with the NTB via the liaison officer for the particular CSB is necessary to assist the body to achieve the best possible outcome. In particular the NTB staff can advise:

- whether the standards being developed are fulfilling the quality requirements;
- on technical information that may assist the development process;
- which other CSBs should be consulted;
- whether other endorsed standards with the same or similar competencies exist;
- which endorsed cross-industry competency standards need to be considered for incorporation into the standards being developed;
- what regulatory or licensing requirements exist at Commonwealth, State or Territory level that can be met through the use of existing competency requirements (e.g. occupational health and safety competency requirements developed by Worksafe Australia);
- how to identify or incorporate any general or key competencies into the standards.

WHAT DO COMPETENCY STANDARDS LOOK LIKE?

Definition of competency standards

Competency standards are precisely worded statements that describe (in outcome terms) the knowledge and skills

required for key functions or roles in workplaces. The statement covering a key function or role is called a **unit of competency**. A unit with its constituent parts describes a component of work that is valued in terms of workplace application.

A unit of competency has a title (and possibly a unit descriptor—a short description of its purpose). Within the unit there are four components.

- *The key activities or elements of the work covered by the unit*, expressed as things an employee is able to do, that is, an action or an outcome. They are called **elements of competency** and are the basic building blocks of the unit.

- *The required level of performance expected in employment*, described by a list of outcomes that need to be assessed when deciding if competency has been achieved. These evaluative statements are called **performance criteria**, and relate to each element of competency.

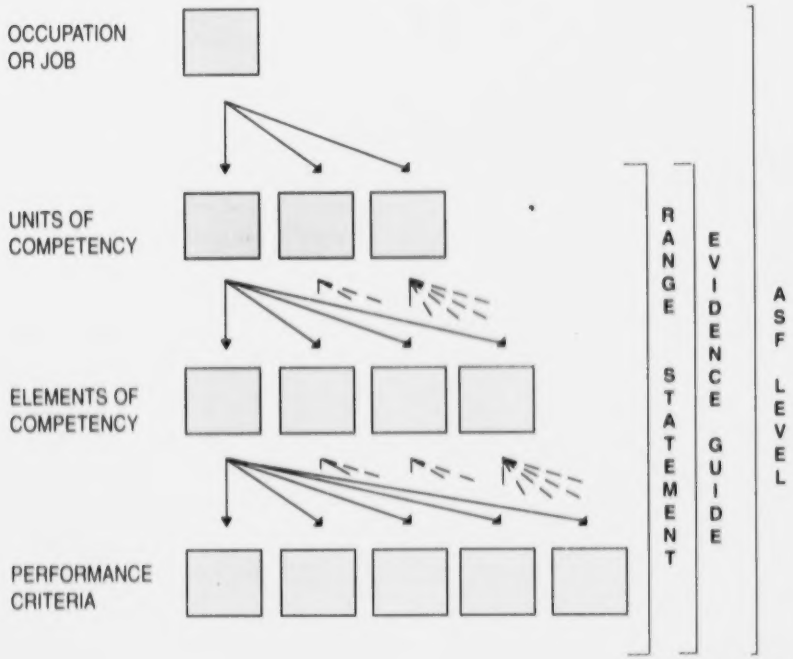
- *The boundaries and context of the unit of competency*, including links to underlying knowledge, equipment use and settings in which competency is displayed. This **range statement** assists in determining the focus for training and assessment in conjunction with the performance criteria.

- *A guide to the interpretation and assessment of the unit*, which can cover what aspects need to be emphasised in assessment, relationships to other units and the required evidence of competency, including the extent of any

sampling of competency. This **evidence guide** relates to the whole unit.

The relationships between the constituent parts are shown in the diagram.

COMPETENCY STANDARDS RELATIONSHIP OF COMPONENT PARTS



Format of standards

The following format is recommended by the NTB.

UNIT TITLE: The title of a general area of competency

UNIT DESCRIPTOR:
Optional, assist with clarifying the unit title

ELEMENTS:	**PERFORMANCE CRITERIA:**
Describe outcomes which contribute to a unit	Specify the required level of performance

RANGE STATEMENT:
Range of contexts and conditions to which the performance criteria apply

EVIDENCE GUIDE:
Assists with interpretation and assessment of unit

An example of a unit adapted from the Level 1 Warehouse Standards shows what a standard looks like in practice.

UNIT TITLE: Assist with the checking of stock

UNIT DESCRIPTOR:
Assist with the counting, recording and reconciling of stock

ELEMENTS:	**PERFORMANCE CRITERIA:**
1 Assist with the counting of stock levels	1.1 Information about stock levels is used 1.2 Stock levels are accurately counted 1.3 Damaged product is noted
2 Assist with the recording of stock	2.1 Discrepancies in stock type, number and quality are recorded 2.2 Stock discrepancies are reported

RANGE STATEMENT:

- Enterprise procedures and policies:
  - enterprise information systems
  - product's signs, codes and labels
  - enterprise stocktaking practices and procedures
- equipment used:
  - calculators
  - scanners, etc

EVIDENCE GUIDE:
Assessment to cover:

- ability to assist with the accurate checking, recording and reporting of stock levels.

Note: A list of the competency standards endorsed by the National Training Board is provided at Appendix F.

WHAT TYPES OF STANDARDS ARE DEVELOPED?

Types of competency standards

There are three types of national competency standards, endorsed by the NTB, stating requirements at three different levels of employment, namely: industry, cross-industry and enterprise standards.

Industry standards, which cover requirements that are common to an industry or a sector of an industry in a way that is relevant to the general requirements of enterprises in the industry. These are the focal standards in the operation of the vocational education and training system, providing as they do a mix of the general and the specific that can be used in units of competency that become part of the 'common currency' for the operation of the system.

For example:

Forestry
- sawmilling and processing
- panel products

Rural
- farm business management
- poultry

Cross-industry standards, which cover those requirements that are common across two or more industries, and can be drawn on for development of standards at the other two

levels to enhance commonality and portability. They are the most general standards developed.

For example:
- assessor standards
- workplace trainer standards

Enterprise standards, which cover requirements for competencies relevant to a particular enterprise, and can include job- and worksite-specific competencies. These are the most specific standards and focus on the individual enterprise, but can incorporate or relate to industry and cross-industry standards, and provide a valid basis for portable competencies and qualifications.

For example:
- crew standards (McDonald's Australia Limited)
- Conaust (Conaust Limited)

In addition there are standards for general competencies that run across all areas of work and all industries. The best known of these are the Key Competencies identified and developed by the Mayer Committee. These key competencies are:
- collecting, analysing and organising information
- communicating ideas and information
- planning and organising activities
- working with others in teams
- using mathematical ideas and techniques
- solving problems
- using technology

Each key competency has three performance levels for it developed by the Mayer Committee.

The NTB currently asks CSBs to identify the key competencies that are present in their standards. This is usually done through a matrix that identifies the dominant key competencies present in each unit of competency. At a later stage it is likely that all relevant key competencies will need to be incorporated in competency standards.

Enterprises and competency standards

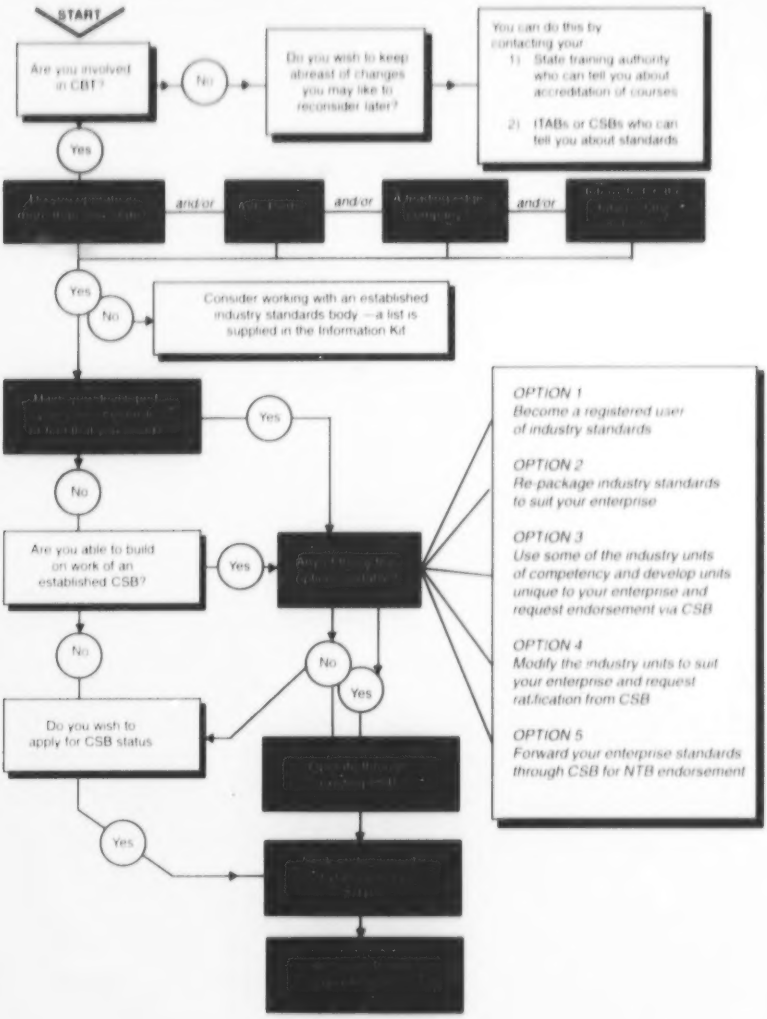
Enterprises have a number of options to use nationally recognised standards and gain access to relevant training based on their needs. Alternatively they can develop their own. These options are outlined in the following flowchart.

Grouping units of competency into packages

Once a CSB has decided on what its units of competency will cover it also needs to decide how it will group units of competency together in combinations or packages which show how the competencies are used in workplaces.

Packaging provides the structure that links individual units of competency together into a meaningful competency standard. Combinations of units packaged together need to relate to groups of functions, and have meaning across a range of industries, across a particular industry, or across an enterprise (depending on the type of standard).

OPTIONS FOR AN ENTERPRISE WISHING TO USE NATIONALLY RECOGNISED STANDARDS


START
Are you involved in CBT?
No
Do you wish to keep abreast of changes you may like to reconsider later?
You can do this by contacting your
1) State training authority who can tell you about accreditation of courses
2) ITABs or CSBs who can tell you about standards
and/or
and/or
and/or
Yes
No
Consider working with an established industry standards body — a list is supplied in the Information Kit
Yes
No
Are you able to build on work of an established CSB?
Yes
No
Yes
No
Yes
Do you wish to apply for CSB status
Yes
OPTION 1
Become a registered user of industry standards
OPTION 2
Re-package industry standards to suit your enterprise
OPTION 3
Use some of the industry units of competency and develop units unique to your enterprise and request endorsement via CSB
OPTION 4
Modify the industry units to suit your enterprise and request ratification from CSB
OPTION 5
Forward your enterprise standards through CSB for NTB endorsement

Combinations of units for industry and cross-industry standards need to be made flexible enough to meet the more diverse needs of enterprises.

Packaging also provides a means of indicating to developers, trainers and assessors the combination of competencies that have meaning in the workplace. This is particularly important where training is not for an existing workforce, but is provided to people seeking employment.

The different ways of packaging units into meaningful combinations and to define the set needed to achieve a particular competency level are set out below.

Core only set

- all units are core units and all are essential and therefore must be achieved

Core group

Unit a	Unit b	Unit c	Unit d
Unit e	Unit f	Unit g	Unit h
Unit i	Unit j	Unit k	Unit l

Core and options set

- a core set of units of competency plus a certain number of optional units of competency must be achieved

Core group

Unit a	Unit b	Unit c
Unit d	Unit e	Unit f

Options group

Unit g	Unit h	Unit i	Unit j
Unit k	Unit l	Unit m	Unit n

All core units are essential to achieve *plus (say)* any 5 of the 8 optional units to achieve competency

Core and specialisation set

- a core set of units of competency plus all units in one or more of the specialisation groups must be achieved

Core group

Unit a	Unit b
Unit c	Unit d

Specialisations group A

Unit e	Unit f	Unit g	Unit h

Specialisations group B

Unit h	Unit i	Unit j	Unit k

Specialisations group C

Unit j	Unit l	Unit m	Unit n

All core units are essential to achieve *plus* all units in one or more of the specialisation groups to achieve competency

Options only set

- a proportion of the available units must be achieved

Unit a	Unit b	Unit c	Unit d	Unit e	Unit f	Unit g
Unit h	Unit i	Unit j	Unit k	Unit l	Unit m	Unit n
Unit o	Unit p	Unit q	Unit r	Unit s	Unit t	Unit u

In this example the requirement could be that any 15 of the 21 units need to be achieved for competency

HOW TO JUDGE THE QUALITY OF A COMPETENCY STANDARD

In this section we provide a series of checklists which enable you to judge the quality of competency standards. We begin by looking at each component part (unit, element etc.) and then look at how to make an overall judgement.

SINGLE COMPONENTS OF A STANDARD

Unit checklist

Is the unit:

- expressed as an outcome expected in the workplace?
- comprised of a verb and object?
- accurate and concise?
- reflecting a key area of competency?
- comprised of a manageable component of work?
- broader than a particular procedure, method or task?

- applicable to other sectors?
- of sufficient 'size' and scope to be recognised by an employer as a creditable achievement in its own right?

Element of checklist:

Does each element:

- describe in output terms what a person is expected to do in the workplace?
- describe an action or outcome that is demonstrable and assessable?
- contain a verb and an object and as such continue the key description of the purpose of the unit?
- describe an outcome or result rather than an actual activity or procedure or method?

Performance criterion checklist:

Is each performance criterion:

- made up of an outcome and a clear evaluative statement?
- precise in its wording so that standards are assessable?
- a description of an activity or skill that is credible and recognisable within the industry?

Range (of variables) statement checklist:

Does the range (of variables) statement:

- apply to the unit as a whole?
- state clearly the context within which work activities are to be performed (including the range of equipment, methods, processes and environments which apply to the standard)?

- provide sufficient guidance for developers of training programs and for assessors to enable them to provide a consistent level of training and assessment?
- describe current and emerging practices?
- include knowledge that is related to required workplace performance?

Evidence guide checklist:

Is the evidence guide:

- clear about what performance evidence is required in order to judge competence?
- clear about what knowledge evidence is required in order to judge competence?
- relating the assessment requirements to the variables specified in the range statement
- providing suggestions about appropriate assessment methods, particularly methods for combining assessments of more than one unit?

SETS OF COMPONENTS OF A STANDARD

Checklist for a group of units of competency

Does the group taken as a whole:

- describe all the competencies required for a combination meaningful to work in industry and enterprises?
- include the full set of units of competency needed to achieve a competency level in the ASF and lead to a qualification?

Hidden competencies that are a part of work—the communication, the health and safety, the interpersonal, the co-ordination and organising aspects (photo SA Forest Industries Training Council Inc.)

- reflect the broad concept of competency—that is:
  - task skills
  - task management skills
  - contingency management skills
  - job role/environment skills?
- reflect current and emerging patterns and trends in work organisation and work expectations?
- reflect the often hidden competencies that are a part of work—the communication, the health and safety, the interpersonal, the co-ordination and organising aspects?
- integrate any general or key competencies identified by the NTB as having to be included in the standards?

Checklist for the whole group of elements of competency

Does the group of elements taken as a whole:

- describe all the actions and knowledge required to achieve the unit of competency?
- cover the often overlooked skills that are an essential part of the key area of competency—for example, organising and co-ordinating skills, communication and interpersonal skills and any other 'non-technical' skills?

Checklist for the whole set of performance criteria:

Do the performance criteria taken as a whole:

- specify in outcome terms all that is required in order to achieve the element of competency including knowledge, understanding, contingencies and variances?
- avoid descriptions of procedures and methods?

- describe only the outcomes that are essential for successful performance?
- include knowledge that is related to required workplace performance?

SUMMARY

Checklist for an overall judgement of a competency standard

In order to summarise the key points about competency standards, this final checklist is included to check that a set of standards does indeed comply with the formal requirements for standards:

Are the competency standards:

- reflecting the way work is organised now and in the foreseeable future?
- describing whole work activities—not just the task or technical aspects of a job?
- easy to understand and use?
- defining the skills that are most important to the industry?
- covering a range of levels on the ASF and also reflecting a career path?
- describing skills that relate to a wide number of tasks and therefore ensuring the standards have portability?
- including all the necessary components—units, elements, performance criteria, range (of variables) statements and evidence guides?
- grouping units of competency into packages that are relevant to the work that is performed?
- integrating all the key competencies which need to be included?
- expressing outcomes that reflect realistic workplace practices?
- containing enough guidance for design and delivery of training programs and for assessment of competencies?

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APPENDICES

For readers who wish further guidance and detail in developing competency standards, Appendix G contains an annotated bibliography of useful publications.

Naturally, the most accessible source of help is the National Training Board

Address: GPO Box 2979, Canberra, ACT 2601
Telephone: (06) 257 1964
Fax: (06) 257 2719

APPENDIX A

LIST OF ABBREVIATIONS USED IN THIS BOOKLET

ASF	Australian Standards Framework
CBT	Competency Based Training
CSB	Competency Standards Body
DACUM	**D**evelop or design **a** **c**urricul**um**
ITAB	Industry Training Advisory Body
NTB	National Training Board
RPL	Recognition of Prior Learning
VET	Vocational Education and Training

APPENDIX B

AUSTRALIAN STANDARDS FRAMEWORK (ASF) DESCRIPTORS

The factors that are built into the descriptors in the progression from lower to higher levels are:

- the level of discretion, autonomy and freedom to act increases and broadens and is related to a wider span of activities;
- the complexity of work, range of contingencies to be dealt with, and the extent of judgements made about it, increase and broaden;
- responsibilities and accountability expand;
- the complexity, depth and/or breadth of the desired knowledge and skills base increases.

DESCRIPTORS OF THE ASF LEVELS ARE PROVIDED IN THE FORM OF A MATRIX ON THE FOLLOWING 2 PAGES

These descriptors are not simply about the requirements of a particular job or occupation. They are about the skills required to perform certain functions in a changing industry or enterprise context. They:

- act as benchmarks to identify groups of competencies that tend to exist at similar levels within and across industries;
- do not necessarily apply in every workplace;
- do not prescribe hierarchies of competencies;
- do not always align against every competency within industry, enterprise or generic standards.

Level	1	2	3
Competency at this level involves—	Application of skills and knowledge to a limited range of tasks and roles	A wider range of skills and knowledge applied	Knowledge with depth in some areas and a broad range of skills
Competencies are normally used—	Within established and predictable routines	Within established routines, methods and procedures	Within routines, methods and procedures where some discretion and judgement required
Judgement, innovation and choice of actions—	Judgement against established criteria	Some discretion and judgement about possible actions	Some discretion and judgement in selection of equipment, work organisation, services, actions and achieving outcomes within time constraints
Responsibility and accountability for—		Responsibility for some roles and co-ordination may be involved if working in a team	Responsibility for the work of others and/or team co-ordination may be involved
Competencies applied—	Under direct guidance with regular checking, but may be less direct with some autonomy if working in teams	Under routine guidance with intermittent checking	Under limited guidance with checking related to overall progress, but may take form of broad guidance and autonomy if working in teams
Range of tasks, roles and contexts—	Specified where the choice of actions is clear	Defined where the choice of actions is usually clear, with limited scope in choice	Variety of contexts with some complexity in the extent and choice of actions required

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4	5	6	7	8
Broad range of skills—depth in some areas applied	Substantial depth in some areas applied	Substantial depth across a number of areas	Mastery of broad and/or specialised skills	Mastery over range of skills and knowledge
Within routines, methods and procedures where discretion and judgement is required	Independently and both routinely and non-routinely	Independently and substantially non-routine	Independently and are non-routine	Within full independence over routine and non-routine areas
Some discretion and judgement for both self and others in planning and selection of equipment, work organisation, services, actions, achieving outcomes within time constraints	Judgement required in planning and selecting equipment, services, techniques and work organisation for self and others	Significant judgement in planning, design technical and supervisory functions related to products, services, operations or processes	Significant high level judgement required in planning, design operational, technical and/or management functions	Highest level of complex judgement applied to planning, design technical and/or management functions
Responsibility for, and organisation of, the work of others may be involved	Responsibility for the planning and management of others may be involved	Responsibility and defined accountability for the management and output of the work of others for a defined function or functions may be involved	Responsibility and broad ranging accountability for the structure, management and output of the work of others and/or functions may be involved	Full responsibility and accountability for all aspects of the work of others and functions, including planning, budgetting and strategy
With only general guidance on progress and outcomes	Under broad guidance	Limited guidance in line with a broad plan, budget or strategy	In accordance with a broad plan, budget or strategy	Involving full responsibility and accountability
Variety of contexts with complexity in the range and choice of actions	Varied and highly specific	Major functions in either varied or highly specific contexts	Highly varied and/or highly specialised	Highly varied and/or highly specialised major functions or specialisations

APPENDIX C

HOW TO BECOME A COMPETENCY STANDARDS BODY (CSB)

The first step for a body that wishes to become a CSB is to decide on:

- the coverage they wish to have
- who the stakeholders are to be involved, and do they agree to the development of standards
- the type of standards they wish to develop
- the extent to which any other endorsed competency standards or recognised CSBs exist in their area of interest

Having done some preliminary work, it is sensible to contact the NTB at an early stage to discuss applying to be recognised as a CSB, and any issues that might be involved. There is an application form available from the NTB covering information required to be considered for recognition as a CSB.

The NTB expects a CSB to:

- develop national competency standards either for a
  - specific industry
  - cross-industry use; or
  - specific enterprise;
- have adequate representation of the major industry or enterprise parties;
- ensure that standards development encompasses a significant part of areas and levels of the industry or enterprise;
- ensure that standards are developed within a realistic timeframe;
- identify any gaps in the standards and explain how these gaps will be dealt with;
- develop the standards according to the criteria and format set out in its *Policy and Guidelines (1992)*;
- consult widely with:
  - other relevant CSBs
  - other parties with direct interest in the standards
  - State and Territory authorities about accreditation of courses, certification and training delivery;
- align the standards to the Australian standards Framework (ASF);
- set up a process to review standards within 2–3 years of their endorsement by the NTB.

COMPETENCY STANDARDS BODIES (CSBS)
(recognised by the National Training Board (NTB) as at August 1994)

AEROSPACE INDUSTRY
Contact: Wendy Katz
National Aeroskills Project Inc.
Locked Bag 12
12 Tullamarine Vic 3043
Ph: (03) 280 7909
Fax: (03) 280 7793

ARTS
Contact: Tina Jackson
Arts Training Australia
PO Box 138
Kings Cross NSW 2011
Ph: (02) 356 4797
Fax: (02) 356 4736

ASSESSORS AND WORKPLACE TRAINER*
Contact: Leigh Toop
Assessors and Workplace Trainers
99 Eridunda Circuit
Hawker ACT 2614
Ph: (06) 254 3500
Fax: (06) 254 9897

AUSTRALIAN PUBLIC SERVICE
Joint Australian Public Service Industry Training Council Core 1
4th Floor, Wing 1
Edmund Barton Building
Barton ACT 2600
Contact: Denis Ives
4th Floor, Wing 1
Ph: (06) 272 3699
Fax: (06) 272 3763

AUTOMOTIVE INDUSTRY
Contact: John Braddy
National Automotive Industry Training Board Ltd
651 Doncaster Road
Doncaster Vic 3108
Ph: (03) 848 8300
Fax: (03) 848 8934

BUILDING AND CONSTRUCTION
Contact: Peter Wilson
National Building and Construction Industry Training Council Ltd
PO Box 650
Carlton South Vic 3053
Ph: (03) 663 8066
Fax: (03) 663 8008

CEMENT AND MANUFACTURED CONCRETE PRODUCTS
Contact: Felicity Morrow
National Cement and Manufactured Concrete Products Competency Standards Body
Suite 4, 191 Riversdale Road
Hawthorn Vic 3112
Ph: (03) 819 6300
Fax: (03) 819 6303

CHEMICALS AND OILS
Contact: Warwick McDonald
The National Chemical & Oil Learning Australia Industry Training Council
PO Box 936
Strawberry Hills NSW 2012
Ph: (02) 310 2899
Fax: (02) 310 2761

CHUBB~
Contact: Patrick Gavaghan
314 Boundary Road
Dingley Vic 3172
Ph: (03) 264 9700
Fax: (03) 264 9757

CLERICAL*
Contact: Clarice Ballenden
National Office Skills Formation Advisory Body
c/- ACM
GPO Box 1469N
Melbourne Vic 3000
Ph: (03) 698 4331
Fax: (03) 698 4383

COAL MINING
Contact: Des Caulfield
National Coal Sector Mining Industry Training Advisory Project Ltd
c/- New South Wales Coal Association
PO Box A244
Sydney South NSW 2000
Ph: (02) 267 6488
Fax: (02) 264 1121

COMMUNITY SERVICES AND HEALTH
Contact: Geof Hawke
Community Services and Health Industry Training Advisory Board
GPO Box 9848
Sydney NSW 2001
Ph: (02) 225 3562
Fax: (02) 225 3903

DRILLING*
Contact Colin Barden
Australian Drilling Industry Training Committee Limited
PO Box 1545
Macquarie Centre NSW 2113
PH: (02) 887 1077
Fax: (02) 888 2078

ELECTRICAL CONTRACTING
Contact: Tony Palladino
National Electrical and Electronic Industry Training Committee Ltd
135 Regent Street
Chippendale NSW 2008
Ph: (023) 319 6977
Fax: (02) 319 5772

EMERGENCY MANAGEMENT
Contact: Peter Koob
National Emergency Management Competency Standards Steering Committee
GPO Box 1290N
Hobart Tas 7001
Ph: (002) 30 2712
Fax: (002) 34 9767

FIRE SERVICES INDUSTRY
Contact: Brian Potter
National Fire Industry Training and Development Project Inc
PO Box 713
Mount Waverley Vic 3149
Ph: (03) 888 1644
Fax: (03) 888 1557

FISHING INDUSTRY
Contact: Dennis Mirabella
National Fishing Industry Training Council Ltd
PO Box 2851AA
Melbourne Vic 3001
Ph: (03) 645 1088
Fax: (03) 645 1740

FOOD PROCESSING INDUSTRY
Contact: Gabrielle Dorward
National Food Industry Training Council Ltd
PO Box 25
Roma Street
Brisbane Qld 4003
Ph: (07) 236 1919
Fax: (07) 236 1999

FOREST INDUSTRIES
Contact: Nick Murray
National Forest Industries Training Council Ltd
PO Box 307
Nunawading Vic 3131
Ph: (03) 878 1579
Fax: (03) 878 0850

FURNISHING INDUSTRY
Contact: Lance Hadaway
National Furnishing Industry
Training Council Ltd
Level 2, 15–17 Park Street
South Melbourne Vic 3205
Ph: (03) 698 4362
Fax: (03) 699 4603

HYDROCARBONS
Contact: Leigh Dryden
National Hydrocarbons Industry
Training Advisory Project
PO Box 64
Calwell ACT 2905
Ph: (015) 296 323
Fax: (06) 292 8153

INSURANCE
Contact: Michael Tancredi
Insurance Training Australia
c/- Insurance Employers
Industrial Association
Level 3, 31 Queen Street
Melbourne Vic 3000
Ph: (03) 629 2201
Fax: (03) 614 7492

LOCAL GOVERNMENT
Contact: Stuart Phillpot
Australian Local Government
Training Board
2 Napier Close
Deakin ACT 2600
Ph: (06) 282 2699
Fax: (06) 282 1441

McDONALD'S
Contact: Deanne Bevan
McDonald's Australia Limited
PO Box 392
Pennant Hills NSW 2120
Ph: (02) 875 6666
Fax: (02) 875 6779

MARITIME INDUSTRY
Contact: Michael Saint
National Maritime Industry
Training Council (Inc)
Level 1, 40 Beach Street
Port Melbourne Vic 3207
Ph: (03) 646 2059
Fax: (03) 646 2380

MEAT
Contact: Margaret Tayer
Meat Industry CSB
MINTRAC
118 Great North Road
FIVE DOCK NSW 2046
Ph: (02) 713 7639
Fax: (02) 713 7614

METALS AND ENGINEERING
INDUSTRY
Contact: Rilda Mossop
National Metal and Engineering
Training Board
PO Box 289
North Sydney NSW 2059
Ph: (02) 929 5566
Fax: (02) 929 8758

PASSENGER SERVICES AND RAIL
Contact: Sally-Anne Thomas
National Public Transport Industry
Training Board Inc
7th Floor, 140 King William Street
East Sydney NSW 2001
Ph: (02) 356 2311
Fax: (02) 368 1308

PLASTIC INDUSTRY
Contact: Doug Fahey
National Plastics and Rubber
Industry Training Council Ltd
PO Box 173
Kensington NSW 2033
Ph: (02) 663 0481
Fax: (02) 662 8134

POLICE
Contact: Prof. Timothy Rohl
National Police Education
Standards Council Inc
PO Box 168
Manly NSW 2095
Ph: (02) 977 5800
Fax: (02) 977 2531

PRINTING INDUSTRY
Contact: John Jarvis
National Printing Industry Training
Council Ltd
PO Box 505
Engadine NSW 2233
Ph: (02) 313 8242
Fax: (02) 313 7516

PROPERTY SERVICES
Contact: Geoff Brookes
Property Industry Competency
Standards Body
PO Box 234
Curtin ACT 2605
Ph: (06) 282 4277
Fax: (06) 285 2444

RECREATION
Contact: Diane Cowan
National Recreational Industry
Training Advisory Board Ltd
GPO Box 701
Canberra ACT 2601
Ph: (06) 248 8346
Fax: (06) 248 8485

REGISTERED ELECTRICAL
LICENSING*
Contact: Nev Bradford
Australian Regulatory Authorities
Licensing Committee
GPO Box 10
Brisbane Qld 4001
Ph: (07) 228 7007
Fax: (07) 228 7015

RETAIL INDUSTRY
Contact: Trish Donaldson
National Retail and Wholesale
Industry Training Council
Suite 1, 17 Burwood Road
Burwood NSW 2134
Ph: (02) 745 3122
Fax: (02) 745 3010

ROAD TRANSPORT INDUSTRY
Contact: Mary Douglas
National Road Transport Industry
Training Committee Ltd
Floor 1, 104 Johnston Street
Fitzroy Vic 3065
Ph: (03) 415 1891
Fax: (03) 415 1892

RURAL INDUSTRY
Contact: Ian McFarlane
Rural Training Council of Australia
(Inc)
PO Box E10
Queen Victoria Avenue
Barton ACT 2600
Ph: (06) 273 2514
Fax: (06) 273 4811

SMALL BUSINESS
MANAGEMENT*
Contact: Marcus d'Assumpcao
Small Business Management CSB
Suite 2, Level 22
AMP Centre, 50 Bridge Street
Sydney NSW 2000
Ph: (02) 223 9711
Fax: (02) 223 9394

STEEL
Contact: Bob Shaw
Steel Industry Competency
Standards Body
GPO Box 2695
Sydney NSW 2001
Ph: (02) 232 2799
Fax: (02) 231 6459

STEVEDORING INDUSTRY
(Waterfront)
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* *Cross Industry*
~ *Enterprise Standards*

APPENDIX E

DATA GATHERING TECHNIQUES: ANNOTATED BIBLIOGRAPHY

Anderson, Tony and Jones, Neil, 1986, *The facilitation of curriculum research workshops in TAFE*, Ed. by Cominos, M. Adelaide: TAFE National Centre for Research and Development. 102 p.
ISBN: 0863971776

Anderson, Tony and Jones, Neil, 1986, *TAFE curriculum research: A review of group process methods*. Adelaide: TAFE National Centre for Research and Development. 171 p.

This TAFE national project examines ways in which technical and further education curriculum research can be accelerated in the data collection and analysis phases. After discussing the need for preliminary investigation the study describes and analyses the following research procedures: exploratory (qualitative) research, the Search Conference Method, the DACUM (developing a curriculum) Method and derivatives of DACUM, the Nominal Group Technique, the Delphi Method, the Critical Incident Technique and Force Field Analysis. The methods were chosen after reviewing the literature and research methods used in TAFE. Since these methods provide different perspectives on occupational analysis and therefore yield different types of data, some ways in which they can be used in combination are covered. A guide to the selection of the methods is provided.
ISBN: 0863971857

Bone, John, 1988, *Training models used in industry*. Adelaide: TAFE National Centre for Research and Development. 51 p.

Training and staff development initiatives in Australian industrial and commercial organisations are described. The report attempts to describe various aspects of training including the organisational philosophy or approach to staff training, the methods adopted in identifying training needs, developing training initiatives, presenting training activities and evaluating the effectiveness of training undertaken in each organisation. These aspects are considered in terms of training models and their appropriateness and effectiveness are discussed.
ISBN: 0863971563

Carlisle, Kenneth E, 1986, *Analyzing jobs and tasks*. Englewood Cliffs, New Jersey: Educational Technology Publications. 221 p. (Techniques in training and performance development series.)

This book contains an extensive collection of job and task analysis techniques. Each technique is flow-charted and described. Charts, diagrams, decision guides, job aids and real life examples are given. The book is divided into the following sections: getting ready to analyse the job; finding what the job is; finding how to learn the job; and completing the

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analysis. A detailed bibliography of job and task analysis literature completes the book.
ISBN: 0-87778-194-X

Clark, Terry W, 1990, *Getting to grips with skills audits*. Leabrook, SA: TAFE National Centre, 68 p. (Getting to grips with . . .)

This booklet explains what skills audits are, setting them in the wider context of industry and award restructuring. It looks at when to use and who should undertake skills audits. Four case studies are described and the implementation of the outcomes of a skills audit discussed.
ISBN: 08639706 21

Hayton, Geoff, 1987, *Analysis for Industry Training Committees: A definitions paper*, by: Hayton, Geoff; Guthrie, Hugh (joint authors). Adelaide: National Centre for Research and Development, 10 p.

This paper is an outcome of the project entitled 'Training Needs Analysis Methodologies'. In this paper the authors contend that Industry Training Committees (ITCs) require comprehensive analyses at various levels if they are to make informed and sustainable recommendations about the training needs of their respective industries. Before defining training needs in this paper, a comprehensive scheme of identification and analysis of human resource problems is briefly described in order to place training needs in an appppropriate context. The scheme described here is the basis for the manual on workforce study methods.

Hayton, Geoff, 1992, *Conducting a skills audit*, by: Hayton, Geoff; Loveder, Philip (joint authors), in Australian Training Review, issue no. 3, p.17-19.
ISSN: 1037-3292

Hayton, Geoff, 1992, *How to do a skills analysis and skills audit*, by: Hayton, Geoff; Loveder, Philip (joint authors). Adelaide: TAFE National Centre for Research and Development, 54 p.

This publication explains the concepts of skills analyses and skills audits and their significance in the context of workplace reform, award restructuring and the training guarantee legislation. It outlines the steps involved in planning the skills project, conducting the project, then implementing changes resulting from the project.
ISBN: 08639727 48

Hayton, Geoff, 1991, *Skills analysis: workshop package on skills analysis, skills audits and training needs analysis*, by: Hayton, Geoff; Brady, Paul T.; Daye, Bert (joint authors). Leabrook: TAFE National Centre for Research and Development, 1 v. (loose-leaf) + 2 booklets

This package was prepared for workshop participants and leaders involved in 2 day workshops on skills analysis, skills audit and training needs analysis. It contains a leader's guide, overhead transparency sheets, and is accompanied by the booklets 'Getting to grips with industry restructuring' and 'Getting to grips with skills audits'.
ISBN: 0863971210

Hayton, Geoff, 1990, *Skills audits and training needs analysis*, paper presented at the DIR/DEET seminar on 'Industrial relations, award restructuring and skills audits' in Canberra, 12 May, 1989, 9 p.

Hayton, Geoff, 1988, *Training for Australian industry: A guide to research techniques for assessing industry training requirements*, by: Fuller, Don; Hayton, Geoff; Guthrie, Hugh; Oxley, Steven; Clark, Terry (joint authors), Canberra: AGPS, 297 p.

This manual has been designed to assist those concerned with advice to the Government, and education and training authorities, on the skill requirements of industry, and presents a methodology for industry and labour market analysis, and for occupational and training needs analysis. This manual will serve as the basis for the development of packages aimed at developing the skill base of Australian industry.
ISBN: 0644088605

TAFE National Centre for Research and Development; Australia, 1989, Dept. of Employment, Education and Training Training needs analysis. Canberra: AGPS, 39 p.

This document summarises the methods of occupational and training needs analysis and provides guidance in choosing the most suitable method and is intended for training development executives and officers in Industry Training Committees (ITCs), TAFE curriculum designers and training providers who have responsibility for developing training programs in their own organisations both in the private and public sector.
ISBN: 0644096489

Williams, B, 1987, *Report on survey of methods of occupational and training needs analysis*, by: Williams, B.; Hayton, Geoff (joint authors), Adelaide: TAFE National Centre, 63 p.

TAFE, Industry Training Committees and industry were surveyed to find which methods of occupational and training needs analysis were being used, to find the perceived effectiveness of each method. This report gives the main findings of the survey.

APPENDIX F

COMPETENCY STANDARDS ENDORSED BY THE NATIONAL TRAINING BOARD as at October 1994

AEROSPACE
- Avionics
- Structures
- Maintenance
- Manufacturing

ARTS
- Museums
- Live Theatre

ASSESSOR/WORKPLACE TRAINERS*
- Workplace Trainers
- Assessors

AUSTRALIAN PUBLIC SERVICE
- Core Competencies
- Human Resource and Development
- Entry Level Competencies
- Procurement Functions

AUTOMOTIVE
(Manufacturing Sector)
- Vehicle Production Line Operations
- Truck Assembly

(Retail Service and Repair Sector)
- Body Stream

BUILDING AND CONSTRUCTION
- Civil Operations Stream
- Fit-out and Finish Stream
- Structures Stream

CEMENT
- Manufacturing Operation Standards

CLERICAL*
- Clerical/Administrative Functions in the Private Sector

ELECTRICAL CONTRACTING
- Electrical Contracting

FIRE SERVICES
- Australian Fire Competency Levels 1-6

FOOD PROCESSING
- Stockfeed
- Flour Milling
- Pharmaceutical Manufacturing and Production
- Sugar Milling

(Wine Industry)
- Laboratory, Viticulture, Warehousing, Cellaring and Cellar Door Sales and Bottling Sectors

(General Food Sector of the Food and Beverage Industry)
- Pasta, Starch and Gluten, Breakfast Foods, Bakery Ingredients, Snack Foods, Extrusions, Muesli Bars - Spices, Condiments, Dry Blends - Wet Blends, Mayonnaise, Spreads - Flavourings, Colourings, Jelly, Malt Extracts - Icing Sugars Sectors

FORESTRY
- Sawmilling and Processing Sector

METALS AND ENGINEERING
- Core Units
- Maintenance and Diagnostics
- Production and Manufacturing Processes
- Fabrications Processes

PLASTICS, RUBBER AND CABLEMAKING
- Plastics, Rubber and Cablemaking

PROPERTY SERVICES
- Real Estate Sector

RESTRICTED ELECTRICAL LICENSING*
- Restricted Electrical Licences

ROAD TRANSPORT INDUSTRY
- Driver Area

RURAL INDUSTRY
- Pig Sector
- Farm Business Management

SMALL BUSINESS MANAGEMENT
- Small Business Management

STEVEDORING
- Operational, Supervisory, Clerical and Security Functions

TEXTILES, CLOTHING AND FOOTWEAR
- Wool Scouring and Carbonising
- Sewing Machine Operations
- Cutting Marker
- Making and Laying Up Operations
- Bundling and Ticketing

TOURISM AND HOSPITALITY
- Food and Beverage
- Guest Services
- Clubs (Gaming)
- Kitchen
- Tour Guides
- Tourist Information Services
- Tourist Attractions

* *Cross Industry*

APPENDIX G

ANNOTATED BIBLIOGRAPHY—OTHER USEFUL REFERENCES RELATING TO COMPETENCY STANDARDS

Readers interested in the origins of many of the present trends in Australia's competency standards work are advised to consult reports coming from the United Kingdom in the mid to late eighties. The three publications from the Further Education Unit (cited below) give a good historical perspective, and for an insight into where the NTB's approach began, see the Mansfield B and Mathews (1985) pamphlet, *Job competence: A description for use in vocational education and training*. Bristol: Further Education Staff College.

Ash, Susan, 1992, *Combining research methodologies to develop competency-based standards for dietitians: A case study for the professions*, by: Ash, Susan; Gonczi, Andrew; Hager, Paul (joint authors). Canberra: AGPS, 45 p. Research paper (National Office of Overseas Skills Recognition); no. 6.

The main aim of this document is to detail the process of establishing competency standards for the dietetics profession on behalf of the Dietitians Association of Australia (DAA) with the support of the National Office of Overseas Skills Recognition (NOOSR). It is intended that this case study, in examining the reasons for choosing the various techniques employed and in analysing the difficulties of applying them, will be of help to people engaged in the process of developing competency-based standards for other occupations. The focus of the paper is on the day to day steps of the process, and the ways in which the various issues were addressed. ISBN: 064424657X

***Australian Chamber of Commerce and Industry Competency based training: How to make it work for you*, 1993**. Melbourne: ACCI, vi, 52 p. This booklet is produced by the Australian Chamber of Commerce and Industry for use in a one day training program on CBT. It is intended to be a guide for those involved in the implementation of CBT. It includes an overview of CBT, and explanation of aspects of CBT, including competency standards, assessment of performance and credentials, and sections on: new techniques of skills formation and recognition; designing and conducting training on a CBT basis; guidelines for the use of workplace trainers competency standards; recognition of prior learning; registration of training providers.

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Butler, Jim, 1990, *Identification and assessment of competencies: The nursing project and its implications*. Canberra: AGPS, 20 p. Research paper, no 4.

The Nursing Competencies Assessment Project (NCAP) conducted research on the validation and assessment of lists of competencies drawn up by the Australasian Nurse Registering Authorities Conference (ANRAC). This paper reports on the research and development stage of the project, pointing out its successful features and the difficulties encountered.
ISBN: 0644135360

***Confederation of Australian Industry CBT: Proposals for the Australian vocational education and training system*, 1991.** Melbourne: Confederation of Australian Industry, v, 49 p.

The new Australian vocational education and training system will begin in 1992. The two main new elements are: a nationally consistent approach to vocational education and training, and progressive introduction of a competency-based approach to training. This booklet outlines the new framework.

Fennell, Edward (ed.), 1992, *Competence & assessment compendium no. 2: A current digest of the latest thinking and best practice*. Sheffield: Employment Dept. Standards Methodology Branch, 78 p.

This second compendium of articles from the quarterly journal 'Competence & assessment' aims to provide a current digest of the latest thinking and best practice in the area of assessment of competence. It addresses four key issues: the setting of competence-based standards; cost-effective assessment; quality assurance for accreditation; the practical implications of designing and introducing these systems.

Fennell, Edward (ed.), 1991, *Development of assessable standards for national certification*. London: Employment Dept. i, 57 p. This publication is written to help Industry Lead Bodies, awarding bodies and others concerned with the development of assessment standards for national certification. It describes the model proposed by the Training Agency & discusses definitions of competences and performance criteria. Guidance in designing assessment systems is provided and examples are included.
ISBN: 0861105702

Foyster, John, 1990, *Getting to grips with competency-based training and assessment.* Leabrook, SA: TAFE National Centre for Research and Development, 72 p.

This booklet explores the meaning of competence and explains what is involved in competency-based teaching and learning. The need for assessment and ways of going about it are discussed, as well as the implications of competency-based training for employers, teachers and learners. A short test for the reader appears at the end of the book.
ISBN: 0863970540

Foyster, John, 1991, *Getting to grips with on-the-job competencies.* Leabrook, SA: TAFE National Centre for Research and Development, iv, 57 p.

This publication looks at training and assessment in the workplace. It uses as an example the working environment of a blackjack dealer in a casino, in order to explore the meaning of competency-based training and assessment. Ideas about how to improve training and assessment by using the competency-based approach are discussed.
ISBN: 0863971628

Further Education Unit (Great Britain) (1984), *Towards a competence-based system.* An FEU view, London.

This report describes the FEU Board of Management view of the task of accepting a training/education philosophy which is concerned with competence rather than time-serving, a principle the FEU believe applies equally to education and training. The FEU offers a wider definition of competence than that normally associated with working life and one which embraces formal and informal learning and extending beyond occupational skills into life skills. Examples from education/training are given which show how competence can be defined, understood, delivered and evaluated.

Further Education Unit (Great Britain), 1986, *Assessment, Quality and Competence: Staff training issues for NCVQ.* London.

Some of the problems, and solutions, that should be addressed if further education teachers are to cope with the requirements of the new National Council for Vocational Qualifications (Great Britain) are discussed. The first part describes the new structure and the objectives formulated by the Review of Vocational Qualifications (RVQ) and discusses the nature and assessment of competence. The second part of the document comprises appendices which give a summary, recommendations and glossary of the

final RVQ report. The document is a useful assessment procedures handbook.

Further Education Unit (Great Britain), 1987, *Relevance, Flexibility and Competence*. London. (ED 290938).

Part 1 of this document offers a curriculum framework and strategy for vocational education and training provision for young people over 14 in the UK. Within this first part of the document is discussed the vocational preparation necessary to accompany vocational change; the aims and themes necessary to make such a framework applicable to a wide variety of clientele who may require several changes of vocational in a lifetime; the conduct of the framework and how it is delivered in terms of outcomes and how it might be delivered. Part 2 of the document provides a series of briefing notes which illuminate various aspects of the main text and should be used as an accompanying resource.

Gonczi, Andrew, 1993, *The development of competency-based assessment strategies for the professions*. by: Gonczi, Andrew; Hager, Paul; Athanasou, James (joint authors). Canberra: AGPS, v, 117 p., Research paper (National Office of Overseas Skills Recognition); no. 8.

This guide, written by researchers from the University of Technology, Sydney, is designed to assist the professions with the development of competency standards. It concentrates on the assessment of performance but not to the exclusion of other forms of assessment. It is intended to be a practical document which will supplement but not replace the many technical works on assessment procedures. It looks at a number of issues associated with competency-based assessment, advises on deciding on a framework for assessment, examines the assessment methods available, discusses selection and evaluation of assessment methods, judging candidates' performance and managing the assessment system. At head of title: Dept of Employment, Education and Training.
ISBN: 0644293692

Gonczi, Andrew, *Establishing competency-based standards in the professions*. by: Gonczi, Andrew; Hager, Paul; Oliver, Liz (joint authors). Canberra: AGPS, 70 p., Research paper, no 1.

This paper introduces the concept of competency-based standards and explains how they may be developed by the professions. It discusses several ways of conceptualising and identifying competencies and of setting standards.
ISBN: 0644133414

Great Britain. Training Agency, 1989, *Development of assessable standards for national certification, Guidance note 2*, Developing standards by reference to functions, Sheffield: Training Agency, 20 p.

This guidance note describes an approach to determining competence-based standards by reference to functions or the purposes of work activities. While similar to techniques used for training needs analysis, it has only recently been applied to the determination of standards. Experience to date suggests that it is well suited to determining standards of good quality. There is also a description of how the 'Job competence model' might be used to review standards to ensure they encompass the relevant broader aspects of competence. Finally, the note describes the wider process which also entails checking and field testing the standards.

Great Britain. Training Agency, 1989, *Development of assessable standards for national certification, Guidance note 5*, assessment of competence, Sheffield: Training Agency, 12 p.

This publication is written to help Industry Lead Bodies, awarding bodies and others concerned with the development of assessment systems for competence-based qualifications. It describes the underlying principles of assessing competence, different methods of assessing competence and factors to consider when deciding which methods to use.

Heywood, Lindsay, 1992, *A guide to development of competency standards for professions*, by: Heywood, Lindsay; Gonczi, Andrew; Hager, Paul (joint authors). Canberra: AGPS, 102 p. ill, Research paper; no. 7.

This guide relates primarily to the development of national competency standards for individual professions. It is intended to be a more 'hands-on' document than the research series papers no. 1 (*Establishing competency-based standards for the professions*) and no. 2 (*Competency-based assessment in the professions*), although those remain relevant in their coverage of the basis of development of competency standards and thus complement the guide. The guide includes more comprehensive examples of units and elements of competency, performance criteria and range indicators from standards developed in Australia. It gives practical feedback on experience with the development and application of competency standards in the Australian context. Discussion of further issues emanating from work on the development of standards by professions during 1990 and 1991 is included.
ISBN: 0644247088

Masters, Geofferey N, 1990, *Competency-based assessment in the professions*. by: Masters, Geofferey; McCurry, Doug (joint authors). Canberra: AGPS. 74 p., Research paper: no 2.

This paper looks at a range of possible approaches to competency assessment in the professions. Wider issues associated with competency-based assessment, and the advantages and disadvantages of various assessment approaches are discussed.
ISBN: 0644134275

Mayer Committee, 1992, *Employment-related key competencies: A proposal for consultation.* Melbourne: The Committee, 71 p.

This paper follows the first discussion paper published by the Mayer Committee. In its preparation, the committee considered the reponses it received to the first paper (almost 200 written responses, as well as consultations with key national organisations). The responses demonstrated broad support for development of the key competencies concept, as well as a wide range of commentary. This paper presents a draft proposal for the set of key competencies and the development of nationally consistent approaches to assessment and reporting on young people's achievements in the key competencies. The paper identifies those aspects of the initial proposal which have been confirmed through consultation. It also explains aspects of the proposal that have been modified and refined in the light of responses to the first discussion paper and through further development.
ISBN: 0646097237

Mayer Committee, 1992, *Employment-related key competencies for postcompulsory education and training: A discussion paper*. Melbourne: Mayer Committee, 34 p.

The Mayer Committee was set up by AEC and MOVEET to explore the concept of key competencies included in the recommendations of the Finn Review. This paper outlines the approach proposed by the committee for development of the key competencies concept, and issues to be considered in the development of nationally consistent approaches to assessment and reporting.
ISBN: 07306246O9

Mayer Committee, 1992, *Key competencies*. [Canberra?]: Australian Education Council and MOVEET. xix, 140 p.

This is the final and full Mayer report The committee chaired by Eric Mayer was set up by the AEC and MOVEET to develop the key competencies concept recommended in the Finn Report. The report proposes a set of seven key competencies that young people need, to be able to participate effectively in the emerging forms of work and work organisation, together with principles to provide for nationally consistent assessment and reporting of achievement of the key competencies. It also identifies the steps needed to implement the committee's proposal. The seven key competencies are: Collecting, analysing and organising information; Communicating ideas and information; Planning and organising activities; Working with others and in teams; Using mathematical ideas and techniques; Solving problems; Using technology.
ISBN: 0646124498

Mayer Committee, 1992, *Putting general education to work: The key competencies report,* [Canberra?]: Australian Education Council and MOVEET. 57 p.

This is a condensed version of the report "Key con;petencies" by the committee chaired by Eric Mayer which was set up by the AEC and MOVEET to develop the key competencies concept recommended in the Finn Report. The report proposes a set of seven key competencies that young people need, to be able to participate effectively in the emerging forms of work and work organisation, together with principles to provide for nationally consistent assessment and reporting of achievement of the key competencies. It also identifies the steps needed to implement the committee's proposal. The seven key competencies are: Collecting, analysing and organising information; Communicating ideas and information; Planning and organising activities; Working with others and in teams; Using mathematical ideas and techniques; Solving problems; Using technology.
ISBN: 064612448X

National Training Board (Australia), 1991, *Eliminating gender bias in the development of national competency standards: An addendum to national competency standards policy and guidelines*. Canberra: The Board. 12 p.

This document outlines the Board's policy and guidelines specifically on gender issues and provides checklists and practical suggestions on eliminating gender bias in the development of competency standards. It should be read and interpreted in conjunction with the NTB's 'National

competency standards: Policy and guidelines', into the next edition of which it will be consolidated.
ISBN: 0646055879

National Training Board (Australia) Employers, 1994, *Competency standards & national training: Some questions answered*. Canberra: NTB. 16 p.

This is a brief guide for employers to use training to help to produce competent workers. It outlines the practice and principles of competency-based training, looks at quality assurance in training, explains industry competency standards, accreditation and national recognition and suggests how a business can become involved in developing and using standards. A list of competency standards bodies for various industries recognised by the National Training Board (at January 1994) is included.

National Training Board (Australia), 1992, *National competency standards: Policy and guidelines*, 2nd ed. Canberra: NTB. 72 p.

This document sets out the policies and guidelines of the National Training Board. It replaces the first edition published in January 1991. It provides broad guidance on the role, development, endorsement, maintenance and review of national competency standards, and the Board's approach and policies for carrying out its charter.
ISBN: 0646026550

National Training Board (Australia), 1993, *Technical guidance*. [Canberra?]: NTB, various pagings, looseleaf in folder.

This technical guidance manual is provided by the NTB as part of its commitment to refine Board advice to both industry and the training and education systems in the development of competency standards. It will be updated at least bi-annually. Areas included in this initial release are: Competency standards bodies; Developing national competency standards; Board processes; Competency-based training; Review of national competency standards; Standards development updates.

NTB Network. No. 1 (June 1991 +)

This monthly newsletter is produced by the National Training Board. Its primary aim is to provide information on competency standards

development in Australia. It also regularly includes information on relevant activities overseas.
ISSN: 1036-7608

Worsnop, Percy J, 1993, *Competency-based training: How to do it—for trainers: A guide for teachers and trainers on approaches to competency-based training*. Canberra: VEETAC, 52 p.

This publication is intended to be a practical guide for those who have to prepare and deliver vocational education and training in the new and reformed order. The ideas and practices outlined are intended to help them make the most of the opportunities offered by their changed role. Areas covered include: what is meant by competency?; the framework for CBT; identifying training needs; designing and developing training; training resources; delivery and evaluation of training; performance assessment. A bibliography and glossary are included.